

# VACUUM-INSULATING SYSTEM AND METHOD FOR GENERATING A HIGH-LEVEL VACUUM

## Abstract of the Disclosure

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A method of generating a high-level vacuum comprises evacuating a chamber having a substantially-pure gas therein to a medium-level vacuum, and freezing the residual gas to generate the high-level vacuum within the chamber. Impurities, such as atmospheric air, may be purged from the chamber by  
10 evacuating the chamber to a medium level vacuum (e.g., around  $10^{-2}$  Torr) and subsequently filling the chamber with the gas. This purging process may be repeated multiple times to decrease the level of impurities in the gas filling the chamber. The substantially-pure gas may have an impurity-level of less than approximately 100 PPM and may comprise carbon-dioxide, although the scope of  
15 the invention is not limited in this respect. The medium level vacuum may range between approximately  $1 \times 10^{-2}$  Torr and  $5 \times 10^{-2}$  Torr allowing the use of a roughing pump, and the high-level vacuum may range between approximately  $1 \times 10^{-5}$  and  $1 \times 10^{-8}$  Torr.